



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/349,347	07/07/1999	CATHERINE ROSENBERG	585-1003	6531

7590 06/15/2004.

WILLIAM M. LEE, JR.
BARNES AND THORNBURG
P.O. BOX 2786
CHICAGO, IL 60690-2786

EXAMINER

ABELSON, RONALD B

ART UNIT	PAPER NUMBER
----------	--------------

2666

DATE MAILED: 06/15/2004

#17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/349,347

Applicant(s)

ROSENBERG ET AL.

Examiner

Ronald Abelson

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 23-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20,21,42 and 43 is/are allowed.
- 6) ☒ Claim(s) 1-3,5,9-11,13,19,23,24,26,27,31-33,35 and 41 is/are rejected.
- 7) ☒ Claim(s) 4,6-8,12,14-18,25,28-30,34 and 36-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2666

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5, 9-11, 13, 19, 23, 24, 26, 27, 31-33, 35, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan (US 6,324,165) in view of Smith (US 6,222,823).

Regarding claims 1, 13, and 23, Fan (US 6,324,165) teaches a method and apparatus for an integrated CAC and BoD system for allocating the resource of a common medium uplink of a multiple access asynchronous network segment (fig. 3). Note, the examiner corresponds the BoD of the applicant with the DRC of Fan.

The CAC is arranged to accept or deny requests for new virtual connections (VCs) on the network segment (col. 2 lines 17-19) and allocates a static resource to all virtual connections or grouping of VCs accepted by the CAC (CBR, VBR, col. 9 lines 3-7).

Art Unit: 2666

The BoD is arranged to allocate dynamic resource on a request basis during an established VC connection (distributes unused bandwidth among competing classes, col. 23 line 66 - col. 24 line 3) and comprises means for allocating dynamic resource in such a way that all VCs or groupings of VCs requesting dynamic resource are dynamically allocated request dynamic resource (DRC scheduling, distribution of unused bandwidth, assigned dynamically, col. 9 lines 44-51) up to at least the guaranteed dynamic resource (scheduler ensures that connection I receives its minimum rate, col. 10 lines 33 - 43).

Although Fan teaches the DRC is responsible for each connection receiving its required bandwidth (col. 10 lines 33 - 42), the reference is silent on the CAC provides a means for booking dynamic resource to the VCs or grouping of VCs that require guaranteed dynamic resource.

Regarding claim 13, when the requested resource from the VC or group of VCs is less than or equal to the booked dynamic resource for the VC or group of VCs, the BoD allocates the VC or group of VCs all of the requested resource (col. 10 lines 41-42).

Regarding claim 13, when the requested resource from the VC or group of VCs is greater than the booked dynamic resource for

Art Unit: 2666

the VC or group of VCs, the BoD allocates the VC or group of VCs the booked dynamic resource (col. 10 lines 41-42) and additionally the BoD allocates the VC or group of VCs a share of the remainder of the requested resource, from the remaining resource capacity of the common uplink (distributes unused bandwidth, col. 23 line 66 - col. 24 line 3).

Smith teaches, in an ATM system (fig. 1), the CAC performs booking a dynamic resource to the VCs or grouping of VCs that require guaranteed dynamic resource (ABR, col. 5 lines 17 - 23). The examiner maintains that ABR traffic requires a guaranteed dynamic resource.

Therefore it would have been obvious to one of ordinary skill in the art, having both Fan and Smith before him/her and with the teachings [a] as shown by Fan, teaches a method and apparatus for an integrated CAC and BoD system for allocating the resource of a common medium uplink of a multiple access asynchronous network segment, and [b] as shown by Smith, the CAC performs booking a dynamic resource to the VCs or grouping of VCs that require guaranteed dynamic resource, to be motivated to modify the system of Fan by having the CAC allocate bandwidth for VC requiring a guaranteed dynamic resource. This modification can be performed by replacing the CAC of Fan with a

Art Unit: 2666

CAC capable of reserving bandwidth for both static and guaranteed dynamic resource connections. This would improve the system by providing a means for the DRC of Fan to allocate guaranteed dynamic resources for each connection.

Regarding claims 2 and 26, the groupings of VCs are within the same subscriber access unit (SAU) or terminal (Fan: fig. 3: CBR, RT_VBR, ABR, UBR).

Regarding claims 3 and 24, the means for allocating static resource in the CAC allocates static resource to a VC when a VC is set up for the duration of the connection associated with the VC (Fan: required bandwidth for each connection, col. 9 lines 14-20).

Regarding claims 5 and 27, wherein the means for allocating static resource in the CAC allocates static resource to a group of VCs and changes the amount of static resource allocated to a group of VCs when new connections are set up or connections are released within the group (Fan: computes the bandwidth required by a real time queue, col. 9 lines 11-20).

Art Unit: 2666

Regarding claims 9, 11, 31 and 33, means for allocating static resource in the CAC on a periodic basis (computes the bandwidth required by a real-time flow, col. 9 lines 10-13) and the BoD allocates dynamic resource on a periodic basis (Fan: col. 10 lines 41-42).

Regarding claims 11 and 33, the allocations made by the BoD for the next period are independent of the current period. Noting (Fan: col. 10 lines 33-52), the current value of M_i is not dependent on the prior value of M_i .

Regarding claims 10 and 32, the CAC allocates static resource and the means for allocating dynamic resource in the BoD allocates dynamic resource on a periodic basis (see claim 9). Regarding the limitation, during a current period the means for allocating static resource in the CAC allocates resource for new VCs and de-allocates resource from released VCs for the next period and the means for allocating dynamic resource in the BoD allocates dynamic resource for the next period to VCs or groups of VCs requesting dynamic resource for the next period, in an ATM environment, the connections are virtual connections wherein the circuits are only active for the duration of the call. Once the call is over, the circuit is de-allocated.

Art Unit: 2666

Regarding claims 19 and 41, the means for allocating static resource in the CAC and the means for allocating dynamic resource in the BoD are constrained to allocate resource in such a way that traffic on the common medium access uplink is shaped by the integrated CAC and BoD resource allocation system (fig. 3: CAC, Dynamic rate based queue scheduler, col. 9 lines 11-14, 39-46) .

Regarding claim 35, when the requested resource from the VC or group of VCs is less than or equal to the booked dynamic resource for the VC or group of VCs, the BoD allocates the VC or group of VCs all of the requested resource (col. 10 lines 41-42) .

Regarding claim 35, when the requested resource from the VC or group of VCs is greater than the booked dynamic resource for the VC or group of VCs, the BoD allocates the VC or group of VCs the booked dynamic resource (col. 10 lines 41-42) and additionally the BoD allocates the VC or group of VCs a share of the remainder of the requested resource, from the remaining resource capacity of the common uplink (distributes unused bandwidth, col. 23 line 66 - col. 24 line 3) .

Art Unit: 2666

Allowable Subject Matter

3. Claims 20, 21, 42, and 43 are allowed.

4. Claims 4, 6-8, 12, 14-18, 25, 28-30, 34, and 36-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 20, 42, 17, 18, 39, and 40, although Fan teaches an allocation table setting out resource allocation on the common access uplink which is controlled by the CAC when allocating static resource and booking dynamic resource (calculated minimum rate, col. 9 lines 11-22) and the DRC allocates dynamic resource (scheduler ensures that connection 'i' receives its minimum rate, col. 10 lines 34-42), nothing in the prior art of the record teaches or fairly suggests the DRC controls the allocation table. In contrast, Fan only teaches the scheduling information is provided to the DRC.

Regarding claims 4, 6, 25, and 28, nothing in the prior art of record teaches or fairly suggests the system books dynamic

Art Unit: 2666

resource and reserves booked dynamic resource to a VC when a VC is set up for the duration of the connection associated with the VC. In contrast, Smith teaches the CAC booking the dynamic resource are the DBC detects the incoming cell (col. 5 lines 17-23).

Regarding claims 7, 8, 29, 30, nothing in the prior art of the record teaches or fairly suggests the specific equation for allocating bandwidth, in combination with the other limitations listed in the claims.

Regarding claims 12 and 34, nothing in the prior art of the record teaches or fairly suggests the allocations made by the BoD for the next period are dependent of the allocations made by the BoD for the current period. In contrast, Fan teaches allocations made by the BoD for the next period are independent of the allocations made by the BoD for the current period. (col. 10 lines 33-42). Note, M_i is dependent only on the current period.

Regarding claims 14, 16, 36, 38, nothing in the prior art of the record teaches or fairly suggests allocating dynamic

Art Unit: 2666

resources by maximizing the sum of the natural logarithms, in combination with the other limitations listed in the claims.

Regarding claims 15 and 37, nothing in the prior art of the record teaches or fairly suggests allocating dynamic resources by maximizing the product of all the BEs, in combination with the other limitations listed in the claim.

Response to Arguments

5. Applicant's arguments with respect to independent claims 1, 13, and 23 have been considered but are moot in view of the new ground(s) of rejection. The examiner agrees with the applicant that Fan does not teach or suggest the CAC "books" any dynamic resource (applicant: pg. 3 3rd paragraph). Therefore, a new search was performed. The examiner maintains that the combination of Fan and Smith teach the limitations addressed in the applicant's response.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

Art Unit: 2666

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ronald Abelson
Examiner
Art Unit 2666

5/28/04


DANTON
PRIMARY EXAMINER